FACT SHEET

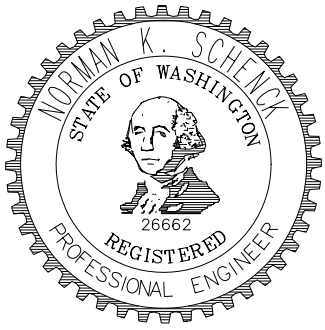
Permit Type:
National Pollutant Discharge Elimination System (NPDES) Permit

Permit Number:
WA0038059

Permittee:
K PLY, INC.
Port Angeles, Washington

Permitting Authority:
State of Washington Department of Ecology
Olympia, WA 98504-7775

Prepared by:
Norman K. Schenck, P. E.



SUMMARY

The permitting authority has made a tentative decision to issue a new permit, effective through June 30, 2007, to K Ply, Inc. for the discharge to Port Angeles Harbor, of non-process wastewaters associated with the manufacture of plywood from raw logs. The tentative decision to issue the permit is based on a determination that two necessary conditions are fulfilled: (1) that the minimum treatment/control criteria established by categorical industry effluent guidelines and the best professional engineering judgment of the permit writer are achievable with the technologies and management practices in place or proposed and (2) that the discharge under these technology-based controls would not have a reasonable potential to cause or contribute to violations of any receiving water quality standards or the characteristic uses of the receiving water. The permitting authority is obligated to issue a permit unless it can demonstrate that these conditions are not met.

The purpose of this fact sheet is to present the facts and reasoning on the basis of which the tentative decision was made. The draft permit should accompany this fact sheet.

PUBLIC INVOLVEMENT OPPORTUNITY

Interested persons are invited to comment on this tentative decision. Comments on the draft permit will be received for 30 days following the day of publication of the notice in the local newspaper, *The Peninsula Daily News*. (The target date for publication is August 18, 2002).

All written comments submitted during the comment period will be retained by the permitting authority and considered in making the final decision on the application for a permit. The permitting authority will provide copies of the application, the tentative decision and the fact sheet on request. Persons who submit written comments will be notified of the final decision.

The applicant or anyone affected by or interested in the tentative decision may request a public hearing. The request must be filed within the 30-day comment period, and must indicate the interest of the party filing such a request and the reasons why a hearing is warranted. The permitting authority will hold a public hearing if it determines there is sufficient public interest.

Please submit written comments to the permitting authority at the above address, to the attention of Industrial Permit Coordinator.

TABLE OF CONTENTS

PUBLIC INVOLVEMENT OPPORTUNITY 2

INTRODUCTION 1
- CURRENT PERMIT STATUS 1
- SUMMARY OF COMPLIANCE WITH THE CURRENT PERMIT 1
- SCOPE OF THE DRAFT PERMIT 2

BACKGROUND INFORMATION 3
- DESCRIPTION OF THE FACILITY 3
  - Location and Site Characteristics 3
  - Industrial Activity 3
  - Sources of Non-process Wastewater 3
- DISCHARGE OUTFALLS 5
- WATER POLLUTION CONTROL MEASURES 5
- EFFLUENT CHARACTERISTICS 5
- THE RECEIVING WATER 7

PERMIT REQUIREMENTS APPLICABLE TO THE DISCHARGES 7
- ALL RECEIVING WATERS 7
- SURFACE WATERS 7

BASIS FOR DRAFT PERMIT DECISIONS ON EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS 8
- TECHNOLOGY-BASED EFFLUENT LIMIT CONSIDERATIONS 8
- WATER-QUALITY-BASED LIMIT CONSIDERATIONS 9

BASIS FOR GENERAL CONDITIONS 10

INTRODUCTION

The Federal Water Pollution Control Act Amendments of 1972, known as the Clean Water Act, and later modifications (1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program. The State has its own Waste Discharge Permit Program, also authorized by Chapter 90.48 RCW, which is applied to waste discharges to other than surface waters (ground water and municipal sewer systems).

Pertaining regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations establish the basis for effluent limitations and other requirements which are to be included in the permit. They also provide that before a final permit decision is made, a draft permit or tentative decision and a fact sheet explaining the basis for its conditions, be made available to the public for comment. After public notice and a minimum thirty-day comment period the Department is obliged to consider the comments received in its final permit decision and to respond to all substantive comments and to hold a public meeting, if there is deemed to be sufficient interest. The regulations also spell out the procedure for appeal of an issued permit.

CURRENT PERMIT STATUS

K Ply and its predecessors (ITT Rayonier and Peninsula Plywood) have had discharge permits from the State since at least 1968. The current NPDES permit became effective July 30, 1997, expiring June 30, 2002. Sufficient application forms were received by Ecology on December 31, 2001, more than 180 days prior to the expiration date. On the basis of this timely and sufficient application, the last permit will continue in effect until a new permit decision is made.

SUMMARY OF COMPLIANCE WITH THE CURRENT PERMIT

During the term of the current permit, but not since April 2001, there were numerous excursions over the Outfall No. 2 effluent limit for suspended solids. This limit is a technology-based limit, set on the basis of the record of past performance, so the excursions were a surprise. There is no clear explanation for these apparent violations. In any case, the most recent monitoring results (after the wet stack scrubber was replaced by a dry scrubbing process show that the discharge has been in compliance with the effluent limit. The wet scrubber was known to be the largest contributor of suspended solids to the wastestream.

SCOPE OF THE DRAFT PERMIT

Water is used at the facility for various purposes. Most of it is discharged, with contaminants of some kind, directly or indirectly to waters of the State. The scope of this NPDES permit is to cover only the discharges of pollutants in non-process wastewater discharges associated with industrial activities to surface waters of the State. The discharge to the municipal sanitary sewer of sanitary sewage and other wastestreams which would have no potential to significantly impact the effluent from the municipal treatment works (including occasional fire control discharges) are not within the scope of this permit; nor is the discharge of storm water runoff associated with the activity. Discharges of process wastewaters are not covered by this permit. Effluent limit guidelines for this category are "no discharge of process wastewater pollutants to surface waters". The previous permit incorporated this limit explicitly, but the new draft permit has been revised in this regard to be consistent with permit program policy as it is being generally applied to this industry category.

There is one defined point-source discharge to surface water (Port Angeles Harbor in the Strait of Juan de Fuca) of non-process wastewaters associated with industrial activity described in the permit application. The scope of the permit is limited to this single point source.

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

LOCATION AND SITE CHARACTERISTICS

K Ply (previously ITT Rayonier and Peninsula Plywood) is located on the waterfront within the City of Port Angeles on property managed by the Port of Port Angeles. The facility was established in 1941 and much of the original infrastructure and equipment are still in use. Much of the 19-acre site, like much of the City's downtown itself, is located on pilings and fill material over what was once tidally-submerged land. The site is flat and most of it is paved with rock, asphalt or concrete and is for all practical purposes impervious. The newly reclaimed bed and estuary of Valley Creek runs along the east boundary. The reclamation (which occurred during the term of the current permit) of this lower channel and estuary from what had long been a man-made channel has substantially reduced the total area of the mill site. To offset some of the lost area, which had been used for log storage, most of a 4-acre former log pond within the site was filled and reclaimed as dry land.

INDUSTRIAL ACTIVITY

The industrial activity at this site is the manufacture of specialty plywoods. Appearance-grade and special paper-surfaced plywoods are made from cottonwood, yellow cedar, red western cedar and Douglas fir. Plywoods are produced in special dimensions, as well as in special materials.

Logs reach the site primarily by truck, but also by barge. Logs are stored on site and debarked outside. They are then transferred inside where thin veneers are cut from the logs by tangential cutting lathes. The veneers or plys are then rough-trimmed and defects are patched as needed. Glue is applied to the individual plys and they are stacked and hot-pressed into plywood sheets. After they leave the presses, the plywood sheets are trimmed to size. A special, smooth-surface paper is applied to some products for special applications.

Ancillary activities at the site associated with the production activities and pertinent to discharge permit considerations are machinery cooling, boiler operation and maintenance, air compressor cooling, and fire control.

The operation is typically active five days per week, "around the clock", with three shifts, employing about 160 people. K Ply is the second-largest single employer in Port Angeles. The facility produced about 33 million square feet of 3/8-inch equivalent plywood last year.

SOURCES OF NON-PROCESS WASTEWATER

Though there are no wastewater discharges to surface waters directly from the processes of the plywood manufacturing, there are several wastestreams from the ancillary, non-process activities

which may carry pollutants to surface waters of the State. These discharges together make up the effluent from Outfall No. 002, as characterized in Table 3. K Ply's water source is the City of Port Angeles potable water supply and distribution system.

Boiler Water Treatment:
A large, wood-waste fueled boiler system is employed in the operation, primarily for the plywood dryers and presses. Before it is used in the boiler heating system, the city tap water is first treated ("softened") by ion exchange, on site. This water treatment system generates its own wastewater stream, a concentrated salt (sodium chloride) solution, which is used to recharge the ion exchange medium. Some of the sodium ions remain on the exchange medium, but all of the chloride ions and the cations which they replaced are discharged with this wastestream. The quantity is estimated to be about 70 gallons per day**.**

Boiler Blowdown:
What is not lost of the softened water used in the boiler heating system (in the process and in leaks) is recirculated. Softened makeup water is added to replace the losses. The boiler water is treated as needed with chemical additives to minimize both corrosion and scaling effects of the resulting concentrated impurities. Some of the recirculated water is regularly purged from the system to remove minerals which have accumulated and deposited in the boiler tubes and maintain an acceptable level of these. The minerals are impurities in the boiler feed water (those remaining even after the softening process). The pollutants in the discharge then are essentially heat, city tap water natural impurities (minerals) and common, environmentally-benign boiler-water treatment additives. Boiler water (and therefore, the blowdown), because of the anti-corrosion additives, has a high hydroxide alkalinity (pH $\cong$12). The discharge quantity is estimated to be 1400 gallons per day.

Machinery Cooling:
Water is used to cool veneer cutting lathes and the plant air compressor. This is once-through, "non-contact" cooling water (that is, it does not come into contact with any of the raw materials, products or wastes used or produced by the activity). The quantity is estimated to be 84,000 gallons per day.

Dryer Fire Control and Washdown:
Fires occur occasionally in the veneer drying process. (Water used to extinguish such fires and dryer washdown water is currently directed to sanitary sewer.) The quantity is estimated to be approximately 640 gallons per day, on average.

Air Pollution Control:
The wastestream from the former air pollution control wet stack scrubber (about 34,000 gallons per day) has been eliminated. The wet scrubber has been replaced (in November of 2001) by a dry, bag-filter system. This change has removed the most significant non-process wastestream contributing to Outfall No. 002 in terms of pollutant discharges (including heat). See Table 2. The removal of this wastestream has resulted in substantial changes from the current permit to the new draft permit.

Storm water:
Rainwater runoff from the site, consistent with permitting program internal policy, will be covered under the separate NPDES general permit for storm water associated with industrial activity. (This is a change from the current permit, which covers storm water associated with industrial activity.

DISCHARGE OUTFALLS

The non-process wastewaters described above discharge together to surface waters of the state from one discrete point source, identified in the permit application as Outfall No. 002, and as described below. (The conveyance identified as Outfall No. 001 in the permit application carries only storm water. In accordance with permit program policy, storm water associated with the activity will be covered separately by a state-administered NPDES general permit.)

Outfall #002 is understood to be the conveyance from the on-site constructed collector pond to the receiving water. It is a combination of buried pipe and open channel.

WATER POLLUTION CONTROL MEASURES

There are no active control measures applied to the wastewater discharges which have a reliable or significant capability to remove pollutants. A collection pond (a remnant of the former log pond) has been maintained at the confluence of the wastestreams that contribute to Outfall No. 002. The pond has an approximate detention time of four hours at the normal non-process water flow rate. This pond is fitted with oil adsorption booms, and will dissipate some heat and retain some of the floating and settleable solids in the wastestreams. But because it also receives high rates of flow from storm water runoff, it cannot be considered a significant and reliable pollution abatement measure, except for pH attenuation. The overwhelming ratio of cooling water (84,000 gallons per day) mixing in the pond with boiler blowdown (1400 gallons per day) can be relied upon to dilute the high pH of the blowdown component (as demonstrated by the discharge data).

EFFLUENT CHARACTERISTICS

Comprehensive analyses of samples of the discharge stream from Outfall No. 002 collected by the permittee were performed by an Ecology-accredited commercial laboratory in December 1988 and October 1992. These included purgeable organics per EPA Method 624, semi-volatile organics per EPA Method 625, organochlorine pesticides and PCB per EPA Method 608, dioxin per EPA Method 625, oil & grease per EPA Method 413.2, TOC per Method 9060, ICP metals per EPA Method 6010, mercury by EPA method 7470. The so-called “conventional” and “non-conventional” pollutants were also analyzed as specified by the EPA application requirements. Further analyses were performed for parameters of interest, that is, parameters which were detected at levels above any applicable effluent guideline or receiving water criterion (or which could cause excursions above any water quality criterion). The results of all the analyses are

summarized in Table 3. (Analytes not detected or not detected in significant amounts are not shown).

Table 1

ANALYTE / PROPERTY	RANGE	#SAMPLES	#DETECTS
Oil and grease, mg/L	<1, 0.23	2	1
Biochemical Oxygen Demand, mg/L	<10, 7.6	2	1
Chemical Oxygen Demand, mg/L	260, 55	2	2
Total Suspended Solids, mg/L	11, ND	2	1
Total Nitrogen, mg/L	1.4, 0.48	2	2
Temperature	8 - 15°C	4	-
Flow, gal./d. x 1000	145 – 160	12	-
Cyanide, mg/L	<0.005 - 0.17	18	3
Sulfide, mg/L	<0.1 - 4.2	18	4
Cadmium, mg/L	<0.002 - .011	13	1
Selenium, mg/L	<0.001 - 0.17	13	9

Since these analyses of discharges from Outfall No. 002, the contributing stack scrubber wastestream has been eliminated. This wastestream was characterized by a separate analysis, summarized in Table 2.

Table 2

ANALYTE / PROPERTY	VALUE
Total Suspended Solids, mg/L	500
pH	7
Temperature, °C	50
Flow, gal./d. x 1000	34
Cyanide, mg/L	<0.01
Sulfide, mg/L	<0.05

Discharge data collected during the term of the current permit and since the elimination of the wet scrubber and exclusive of storm water runoff are summarized in Table 3. (This data is taken from discharge monitoring reports and the permit reapplication.)

Table 3

ANALYTE / PROPERTY	RANGE	#SAMPLES	#DETECTS
Oil and grease, mg/L	<5	6	0
Total Suspended Solids, mg/L	4 - 11	6	6
Biochemical Oxygen Demand, mg/L	undetected	6	0
pH	7.7 - 7.9	6	NA
Temperature	10 - 16	3	NA

Flow, gal./d. x 1000	98 - 126	6	NA
Cyanide, mg/L	<0.05	6	0
Sulfide, mg/L	<0.005	6	0

THE RECEIVING WATER

The receiving water (Port Angeles Harbor) at the point of discharge is designated as a "Class A (excellent)" marine water body for the purposes of the application of state water quality standards. Water quality of this class shall meet or exceed the requirements for all or substantially all designated uses. Characteristic and designated uses for Class A waters include: salmonid and other fish migration, fish and shellfish rearing, spawning and harvesting, wildlife habitat, primary contact recreation, sport fishing, boating and aesthetic enjoyment, commerce and navigation. Distinctive narrative and numerical water quality standards established by the State of Washington for this class are set out at WAC 173-201A-030(2)(c).

PERMIT REQUIREMENTS APPLICABLE TO THE DISCHARGES

ALL RECEIVING WATERS

State law (RCW 90.48.160) requires any person who conducts a commercial or industrial operation of any type, which results in the disposal of solid or liquid waste material into waters of the state (ground or surface), to procure a permit before disposing of such material.

The Revised Code of Washington declares it "to be the public policy of the State of Washington to maintain the highest possible standards to insure the purity of all waters of the state and to that end will require the use of all known available and reasonable treatment and other measures by industries and others to prevent and control the pollution of the waters of the state." (RCW 90.48.010)

SURFACE WATERS

The Clean Water Act makes the discharge of any pollutant to waters of the U.S. unlawful without a permit so authorizing (Section 301a). Title IV of the federal Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES) permit program. Every point source discharger must obtain a permit from EPA or an authorized state. EPA or a delegated state permitting authority may issue a permit to discharge pollutants (Section 402) upon condition that the discharge meets certain requirements. The permit must assure: (1) that the discharge meets any applicable and appropriate technology-based requirements (these can be numerical limitations based on demonstrated capability of available technology applications and/or "best management practices" to prevent and control discharges of pollutants) and (2) that it does not in any case cause or contribute to violations of the applicable receiving water standards.

The Washington Administrative Code and the National Toxics Rule (WAC 173-201A and 40 CFR Part 131) establish water quality standards for state surface waters (see *THE RECEIVING WATER*, p.7). Permits for discharges of pollutants may not allow the discharge to cause or contribute to violations of these standards even under the most critical conditions. These standards provide for a limited "mixing zone" in the receiving water at the point of discharge within which the standards may be exceeded.

BASIS FOR DRAFT PERMIT DECISIONS ON EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

In this section, the bases for the effluent limitations in the permit are explained. For each outfall, appropriate technology-based limits will first be explored, and then those for water quality based limits.

Technology-based effluent limit guidelines have been established and promulgated by EPA for certain categories of industries. These are generally numeric guidelines, which reflect accepted minimum control strategies or technologies applied to discharges from similar industries. Timber products processing is one such categorical industry, its effluent limitations guidelines codified at 40 CFR Part 429. These must be applied in the draft permit. They are deemed to also satisfy the state requirement that all known available and reasonable methods to prevent and control pollution be applied to discharges to waters of the state. Technology-based controls on discharge streams not included in the effluent guidelines (e.g., non-process and storm water discharges associated with the activity) are left to the best professional judgment of the permit writer. Unless discharges at these technology-based limits might violate water quality standards, they will be the permit effluent limits for the guideline parameters.

Evaluations of the need for more stringent, water-quality-based effluent limits will be based on the most stringent applicable water quality criterion for the pollutant in the receiving water, taking into account a mixing zone allowance and the associated minimum calculated dilution factors at "critical conditions" of receiving water flow and pollutant loading. Any constituents or effects of the discharge, whether or not they are addressed by effluent guidelines, that might cause or contribute to water quality violations, are subject to evaluation of the need for water quality based limits. The need for such evaluations is determined from the information supplied by the permit applicant on the permit application forms and any pertinent supplemental information requested by the permitting authority.

TECHNOLOGY-BASED EFFLUENT LIMIT CONSIDERATIONS

All three timber products processing subcategory effluent limit guidelines applicable to this operation (barking, veneer and plywood) are “no discharge of wastewater pollutants to navigable waters”. Permitting program policy has established that no permit is necessary to implement these effluent guidelines. The draft permit, by not explicitly allowing these discharges, implicitly applies this limitation to discharges from Outfall No. 002 (but includes no self-monitoring and reporting program to confirm it).

The "process wastewaters", as defined for the purposes of the categorical effluent limitations for this industry, specifically exclude non-contact cooling water and boiler blowdown discharges. For these non-process wastewater discharges, effluent limitations reflecting minimum expected levels of treatment, prevention and control of pollutant discharges are left to the best professional judgment of the permit writer (40 CFR 125.3(c)(2)).

In the best professional engineering judgment of the permit writer, taking into account site constraints and the cost of application of treatment technologies in relation to the effluent reduction benefits to be achieved, there are no practicable technologies that could be cost-effectively applied to remove pollutants from these non-process wastewater discharges, and therefore no technology-based effluent limits are imposed in the draft permit.

These technology-based effluent limits (no limits in this case) apply to the discharge unless discharges at these limits would potentially cause or contribute to violations of receiving water quality standards. The need for more stringent limits, based on potential receiving water quality impacts, is considered in the next section.

WATER-QUALITY-BASED LIMIT CONSIDERATIONS

Based on the discharge data (Tables 1 and 3), just one parameter (temperature) warrants consideration in this regard. There are no other conventional, non-conventional or toxic pollutants indicated in amounts which could violate receiving water quality standards. Cyanide and sulfide were monitored during the term of the current permit because they were detected at levels above water quality standards in the comprehensive analysis of the wastewater done in 1992. The monthly sampling over five years revealed no detectable amounts of either. There is no obvious source of these substances in the activities at the site. In an effort to explain the detections, the permittee had the rope used with the sampling bucket analyzed and found cyanide. The use of that kind of rope was discontinued. The source of sulfide in the discharge was probably anaerobic biochemical activity in the sediments of the former log pond (now filled).

Temperature

The discharge temperature as characterized by the permit application, at a high of 16°C, would itself meet the receiving water maximum temperature criterion. The state water quality standards for Class A marine waters specify that temperature may not be caused to exceed 16.0°C by any unnatural discharge of heat. They also specify, however, that if the natural water body temperature exceeds 16.0°C, no unnatural discharges of heat will be allowed which would increase the temperature of the receiving water by more than 0.3°C. In any case, no point source discharge shall cause an incremental increase exceeding a value determined by the equation: $\Delta t = 12/(T-2)$, where T = the unaffected ambient temperature of the receiving water. The temperature criterion, though not based on toxicity, applies arbitrarily outside the same mixing zone which is allowable for aquatic life chronic toxicity criteria exceedence, in this case, within a maximum radius of 200 feet.

Considering the worst case criterion (maximum 0.3°C increase beyond 200 feet), and that the fresh water discharge will tend to "float":

The volume of water in the top, say, one-foot of the allowable mixing zone is approximately 1,000,000 gallons. The discharge during a tidal cycle at the rate of discharge requested would be about 42,000 gallons. The dilution factor then, assuming complete mixing in this upper layer, is about 25 times. (Complete mixing is not likely, but it simplifies calculation and is suitable for all the intents and purposes of this demonstration.) This means the average discharge temperature differential could be 25 times the criterion differential, or 7.5°C. The lowest discharge temperature that might cause a temperature increase in the receiving water beyond the exempted mixing zone in violation of the strict 0.3°C allowance is then 16 + 7.5 = 23.5°C (74.3 F). The past measurements, ranging from 42 to 60 °F, indicate that there is no reason to expect that this discharge could violate the temperature standards for the receiving water, and therefore, no reason to establish effluent limits or monitoring requirements for temperature in the permit.

BASIS FOR GENERAL CONDITIONS

The general conditions of the permit stem from Title 40 of the Code of Federal Regulations paragraphs 122.21, 122.22, 122.41, 122.42, 122.43, 122.44, 122.62, 122.63 and 122.64 and Chapter 173-220 of the Washington Administrative Code. These paragraphs of the federal regulations and this section of the state regulations together spell out conditions that are required in all NPDES permits. However, those conditions that would not be pertinent to this permit, which has no effluent limits or monitoring requirements or other special conditions, have been omitted.